Cleburn Street Well
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Five-Year Review Report

Five-Year Review Report
for
Cleburn Street Well Superfund Site
Grand Island, Nebraska

September 2003

Prepared By:
United States Environmental Protection Agency
Region 7
Kansas City, Kansas

40102958
SUPERFUND RECORDS

Approved by:

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Superfund Division
U.S. EPA Region 7

9/30/03
Date:

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List of Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
LTRA	Long Term Response Action
NCP	National Contingency Plan
NDEQ	Nebraska Department of Environmental Quality
NDOH	Nebraska Department of Health
NPL	National Priorities List
OU	Operable Unit
PCE	Tetrachloroethene
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasability Study
ROD	Record of Decision
RPM	Remedial Project Manager
SVE	Soil Vapor Extraction
VOC	Volatile Organic Compound

Executive Summary

The Cleburn Street Well Site (the Site) is located in Grand Island, Hall County, Nebraska. The Site encompasses a portion of the downtown area, and is surrounded by a variety of light industries, commercial businesses, and residential dwellings and involves five operable units (OUs). This five-year review was triggered by the remedial action onsite construction start at OU1. Construction at OU5 is currently ongoing. The remedies are also in place at OU2, OU3, and OU4. Construction of OU5 is anticipated to be completed in the summer of 2004. Completion of construction at OU5 will complete the construction for the Site.

The Site consists of a former municipal water supply well, the Cleburn Street well, and surrounding ground water and soils containing volatile organic compounds (VOCs), primarily tetrachloroethylene (PCE). Results of the remedial investigation completed in 1993 indicate four separate source areas including three dry cleaning facilities, represented by OUs 1 through 4, and a former solvents distribution facility, OU5. The three dry cleaner source areas include the former One Hour Martinizing facility (OUs1 & 2), the Liberty Services facility (OU3), and the Ideal Cleaners of Grand Island facility (OU4).

In 1993, EPA began a non-time-critical removal action to contain the highest levels of PCE contamination by extracting ground water from the area around the former One Hour Martinizing. The removal action consisted of the installation of one ground water extraction well at the One Hour Martinizing source area and connection of the discharge piping to the city sanitary sewer. Results of post-removal monitoring indicate that approximately 1,000 pounds of PCE have been removed from the ground water. No adverse impacts have been observed to the operation of the wastewater treatment plant.

The ground water extraction well installed during the 1993 removal action became part of the ground water extraction and treatment system specified in the ROD for OUs 1 and 2. Ground water monitoring conducted under the removal action was incorporated as part of the remedial action.

Institutional controls and ground water monitoring were selected as the remedy for OU3 and OU4. Restrictions have been designed to prevent the use of shallow ground water for drinking water and other household uses, and call for the registration of new wells in the area of contamination. The city of Grand Island has passed and is enforcing the necessary ordinances. Ground water monitoring will include the installation of one new monitoring well placed downgradient of each source area and routine sampling of these wells and existing wells to track the movement of the contaminant plumes. The natural processes of microbial degradation and dilution will be allowed to attenuate contaminant levels.

The former Nebraska Solvents Company, the source area for OU5, is located in west central downtown Grand Island, Nebraska, and is a relatively small tract where there have been releases of VOCs. The Environmental Protection Agency (EPA) signed a Record of Decision (ROD) for

OU5 on September 10, 2001. The selected remedy provides for the construction and operation of a single phase soil vapor extraction system and air sparging system to address the VOCs in the soil and ground water.

The five-year review finds that the immediate threats have been addressed at OUs 1, 2, 3, and 4. The remedy for OU5 is scheduled to complete construction in the summer of 2004. The existing OU remedies are operating in a manner that is protective of human health and the environment in the areas that they address. With the construction of OU5, the entire site will be addressed and in a condition that is protective of human health and the environment. The EPA is the lead agency for OU2 and OU5; NDEQ is the lead agency for OU1, OU3, and OU4.

5-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Cleburn Street Well Site		
EPA ID: NED981499312		
Region : 7	State: NE	City/County: Grand Island/Hall
SITE STATUS		
NPL status: __X__Final __Deleted _____ Other (specify)		
Remediation status (choose all that apply) __X___Under Construction __X___Operating ___Complete		
Multiple OUs? __X_YES _NO	Construction Completion Date 9 /30/2004 Planned	
Has site been put into reuse __X__YES __NO Site use continues as was.		
REVIEW STATUS		
Lead agency: __X_ EPA _X__State ___Tribe ___Other Federal Agency _____		
Author name: Steven E. Kinser		
Author title: Remedial Project Manager	Author affiliation: U.S. EPA, Region 7	
Review Period: 10/2002 to 9/2003		
Date(s) of site inspection:		
Type of review: __X Post SARA ____Pre-SARA ___NPL-Removal Only ___Non-NPL Remedial Action Site ___NPL State/Tribe-lead ___Regional Discretion		
Review number: _X__1 (first) ___ 2 (second) ____3 (third) ___Other (specify)		
Triggering Action: _X_Actual RA On-site Construction at OU #01 and 02 Actual RA Start at OU#1- 4 ___Construction Completion _Previous Five-Year Review Report ___Other (specify)		
Triggering action date : 3/23/98		
Due date (five years after triggering action date): 3/23/2003		

Five-Year Review Summary Form, cont'd.

Issues:

There are five OUs. This five-year review was triggered by the remedial action onsite construction start at OU1. OUs 2, 3, and 4 are also complete in terms of the remedy being in place. Construction of OU5 is anticipated to be complete in June of 2004. Completion of construction at OU5 will complete the construction for the Site.

Recommendations and Follow-up Actions:

Hazards at this Site are currently being remediated and/or additional remedial action is being planned. Onsite treatment systems in OU2 are treating and/or containing the contaminated ground water. In addition, the contaminated soils in OU1, which have a potential for further impacting the ground water, are being treated. The EPA recommends continual monitoring of the systems and review for optimization opportunities. Some activities have been completed and others are planned to implement recommendations resulting from agency optimization review of the Site. A remedial action is planned at OU5 to address soils and ground water in the vicinity of the former Nebraska Solvent facility. Upon completion of actions under OU5, all contaminated soils and ground water for the Site will be under treatment. Any future use of the Site should be compatible with the response actions selected by EPA for OUs 1-5. The EPA will transmit a copy of this five-year review report to the city which will include conclusions and recommendations.

Protectiveness Statement(s):

All immediate threats at the Site have been addressed in OUs 1, 2, 3, and 4. The remedy for OU5 is scheduled to complete construction in the summer of 2004. The existing OUs are protective of human health and the environment in the areas that they address. With the construction of OU5, the entire site will be addressed and in a condition that is protective of human health and the environment. Public water is available to the area surrounding the site. Residences where contamination is present or nearby are connected to public water. The ground water is currently being treated at OU2. Soil contamination is also being treated at OU1 to prevent future contamination of the ground water.

Long-term Protectiveness:

The long-term protectiveness of the remedial action is based upon two factors. First, municipally treated water is no longer threatened by contamination as contaminated ground water is no longer being used as a source of drinking water. Second, the contaminated plumes are being contained and treated and therefore will not spread significantly beyond current plume boundaries. All remedial action objectives for OU1 - 4 have been or are being achieved, and the long-term protectiveness of the Site will be assured once OU5 is constructed.

Other Comments:

None

Cleburn Well Superfund Site
Grand Island, Nebraska
Five-Year Review Report

I. Introduction

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify issues found during the review, if any, and identify recommendations to address them.

The Agency is preparing this five-year review report pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121 and the National Contingency Plan (NCP). CERCLA §121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews.*

The Agency interpreted this requirement further in the NCP. 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The United States Environmental Protection agency (EPA) Region 7, conducted the five-year review of the remedy implemented at the Cleburn Street Wells Superfund Site Grand Island, Nebraska. This review was conducted by the Remedial Project Manager (RPM) for the site from October 2002 through September 2003. This report documents the results of the review.

This is the first five-year review of the Cleburn Street Well Site. The triggering action for this statutory review is the start of the remedial action onsite construction for Operable Unit 1 (OU1). Currently, four OUs have been constructed. The fifth and final OU for the site is scheduled for completion of its construction in the summer of 2004.

II. Site Chronology

Table 1 - Chronology of Site Events (excluding OU5)

Event	Date
NDOH discovers PCE in drinking water	3-1986
NDOH confirms PCE in drinking water	4-1986
EPA conducts soil-gas survey of PCE plume	1988
EPA conducts PRP search	1990-1992
Site proposed for NPL	7-29-1991
RI/FS for OU1 started	9-16-1991
Removal Assessment completed	12-24-1991
Final listing on NPL	10-14-1992
OU1 Draft RI complete	2-16-1993
EE/CA completed	4-1-1993
Action Memorandum signed	8-23-1993
OU1 RI approved	1-1-1994
OU1 FS approved	7-1-1995
Record of Decision OU 1- 4 approved	6-7-1996
Remedial Design OU4 complete	6-11-1997
Remedial Design OU3 complete	6-11-1997
Remedial Design OU1 complete	9-22-1997
Remedial Design OU2 complete	9-22-1997
Remedial Action OU1 commences	12-15-1997
Remedial Action OU2 commences	12-15-1997
Remedial Action physical construction complete OU1	9-18-1998
Remedial Action physical construction complete OU2	9-18-1998
Remedial Action OU3 complete	7-14-1999

Remedial Action OU4 complete	7-14-1999
Operation & Maintenance begins OU3	9-10-1999
Operation & Maintenance begins OU4	9-10-1999
OU1 is Operational and Functional	10-29-1999
OU2 is Operational and Functional	10-29-1999
OU2 enters Long-Term Remedial Action (LTRA)	2-8-2000
OU5 ROD completed	9-10-2001
OU5 C.D. entered	9-20-2002

III. Background

Physical Characteristics

The Cleburn Street Well Site is located in Grand Island, Hall County, Nebraska. The Site is situated in central Nebraska, approximately two miles north of the Wood River and approximately seven miles northeast of the Platte River. The Site encompasses a portion of the downtown area, and is surrounded by a variety of light industries, commercial businesses, and residential dwellings.

The Site is located in the Great Plains physiographic province in the middle of the Platte River Basin. Surface topography is generally flat with natural surface drainage flowing in a northeasterly direction. Much of the surface water runoff from the Site is controlled by man-made features such as storm sewers and gutters. The Platte River flows from southwest to northeast and is situated approximately seven miles south of Grand Island. Ground water flows in a northeasterly direction in the vicinity of the Site.

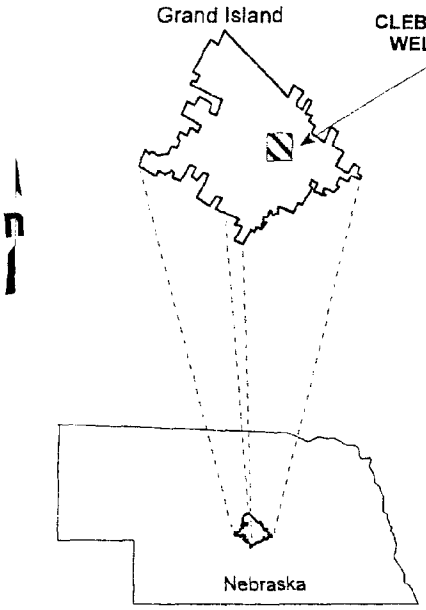
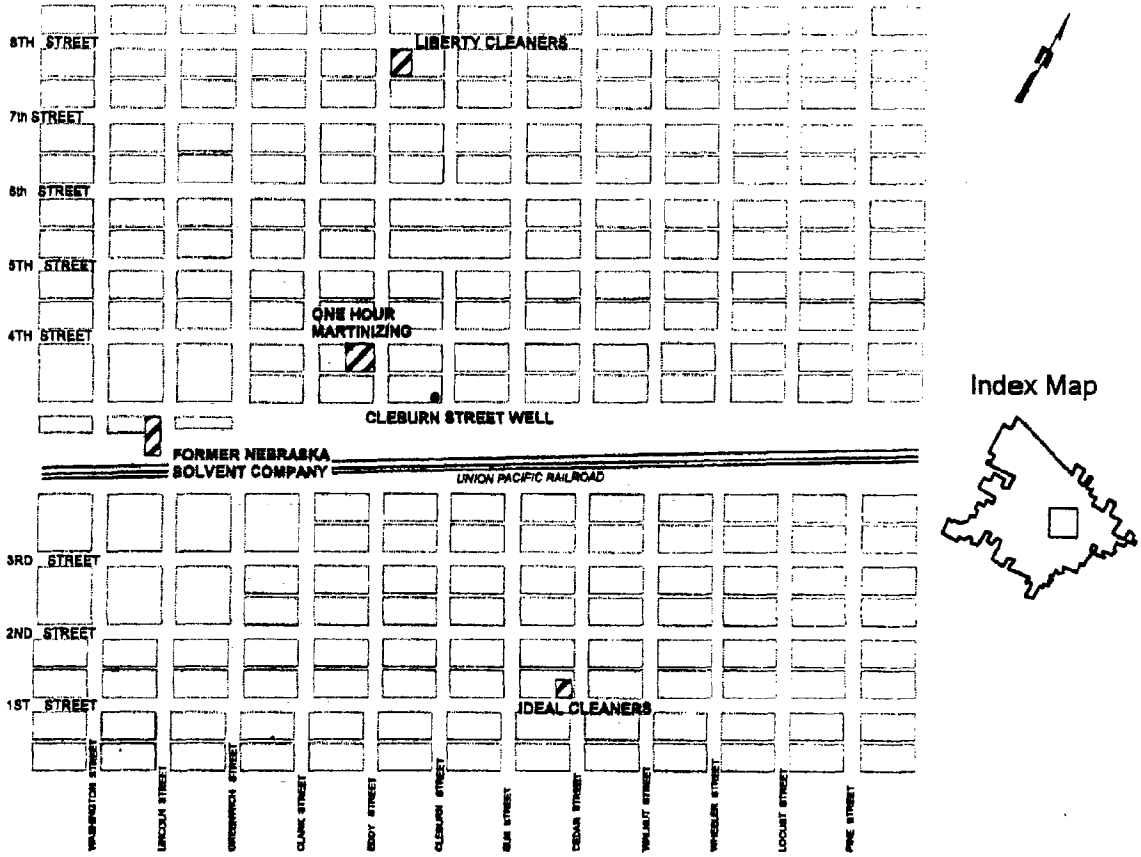


Figure 1 - Site Location

The Site consists of a former municipal water supply well, the Cleburn Street well, and surrounding ground water and soils containing volatile organic compounds (VOCs), primarily tetrachloroethylene (PCE). Results of the remedial investigation (RI) completed in 1993 indicate four separate source areas including three dry cleaning facilities and a former solvents distribution facility. Figure 2 below shows the location of all four source areas.

The three dry cleaner source areas include the former One Hour Martinizing facility, the Liberty Services facility, and the Ideal Cleaners of Grand Island facility. Results of the RI indicate that the primary source area responsible for contamination of the Cleburn Street municipal well is the former One Hour Martinizing facility. Extremely high contaminant levels were found in the shallow subsurface soils and ground water in the vicinity of this facility. The Liberty Services and Ideal Cleaners source areas exhibit lesser degrees of contamination and are not believed to contribute to contamination of the Cleburn Street well.

Figure 2 - Location of Source Areas



Land and Resource Use

The Site encompasses a portion of the downtown Grand Island (the city) area. The Site is surrounded by a variety of light industries, commercial businesses, and residential dwellings. The source of contamination is from three dry cleaning establishments and a solvent distribution facility.

History of Contamination

Contamination in the Cleburn Street well was first discovered in March 1986 when the Nebraska Department of Health (NDOH) detected PCE at a concentration of 21.9 micrograms per liter (ug/l). The NDOH re-sampled the well in April 1986 following a citizen's complaint of poor taste and odor in the municipal drinking water, and confirmed the presence of PCE at a

concentration of 26.9 ug/l. The Cleburn Street well was subsequently closed for drinking water purposes.

Since 1986, the city has continued to operate the Cleburn Street well for the purpose of alleviating flooding problems in the nearby Eddy Street railroad underpass. Until September 1992, ground water pumped from the Cleburn Street well was discharged to the city storm sewer for direct discharge to the Wood River. In early 1993, the city, with approval from the Nebraska Department of Environmental Quality (NDEQ), redirected discharge of the ground water to the city's sanitary sewer for treatment in the city's wastewater treatment plant.

In 1988, EPA conducted a soil gas survey to identify potential sources of the PCE contamination. Based on the findings of the soil gas survey and previous sampling, the Site was proposed for the National Priorities List (NPL) on July 29, 1991. Listing of the Site was finalized on October 14, 1992.

Between 1990 and 1992, EPA conducted a search for potential responsible parties (PRPs). The EPA issued information request letters to several parties associated with potential sources identified during the soil gas investigation. The Remedial Investigation/Feasibility Study (RI/FS) began in 1992 to define the nature and extent of contamination. The EPA funded the RI/FS for areas other than OU5 because no viable PRPs existed to pay for the work. The first phase of the RI for this site was conducted in May 1992 and consisted of the installation of several ground water monitoring wells at all of the potential source areas, and the collection of numerous ground water and soil samples. In addition, a cone penetrometer survey consisting of the collection of discrete ground water samples from small, temporary boreholes was conducted. Results of the Phase I RI revealed four primary source areas and further revealed them to be separate and distinct areas of contamination: 1) former One Hour Martinizing, OU1 & OU2; 2) Liberty Cleaners and Shirt Launderers, OU3; 3) Ideal Cleaners of Grand Island, OU4; and 4) former Nebraska Solvent Company, OU5.

During the period the RI was being conducted, EPA began a non-time-critical removal action to contain the highest levels of PCE contamination by extracting ground water from the area around the former One Hour Martinizing. This action was taken to prevent the contamination from impacting downgradient municipal water wells. Using available information from the RI, EPA prepared an engineering evaluation/cost analysis (EE/CA) and an Action Memorandum to support the removal action. The removal action consisted of the installation of one ground water extraction well at the One Hour Martinizing source area and connection of the discharge piping to the city sanitary sewer. With approval from the city and NDEQ, ground water from this area is being extracted and discharged to the sewer for treatment in the publicly owned treatment works (POTW).

Since July 1993, the extraction system has been pumping ground water to the sanitary sewer at a rate of approximately 50 gallons per minute. The Action Memorandum called for post-removal monitoring to ensure that the additional contaminant load does not adversely impact the operation of the city's POTW. Results of post-removal monitoring indicate that approximately

1,000 pounds of PCE have been removed from the ground water. No adverse impacts have been observed to the operation of the wastewater treatment plant.

The EPA determined the owner and former operator of the One Hour Martinizing facility were potentially liable for cleanup of the contamination stemming from the source area encompassing OUs 1 and 2 . However, the former operator, One Hour Martinizing, was insolvent and was not issued a CERCLA notice of potential liability. The EPA issued a special notice letter to the property owner who had leased the property to the operators of the One Hour Martinizing facility. The property owner did not have sufficient funds to contribute toward investigation and cleanup of the property; therefore, it was determined that there were no viable PRPs for OU1 and OU2, and EPA initiated a fund-lead RI/FS.

The EPA determined that the source area for OU3 was the former Liberty Cleaners and Shirt Launderers. Again, evaluations of the parties responsible revealed no viable PRPs for this OU.

The EPA determined that the source area for OU4 was the Ideal Cleaners of Grand Island. An evaluation of all parties associated with the Ideal Cleaners of Grand Island was made, and no currently viable PRPs for the OU were found.

The Nebraska Solvent Company Facilities, OU5, was located on property owned by the Union Pacific Railroad (UPRR). The EPA determined that UPRR was a PRP and accordingly sent UPRR a special notice letter.

OU5, located in west central downtown Grand Island, Nebraska, is a relatively small tract where there have been releases of VOCs. The former Nebraska Solvents Company Facilities is located at an area generally bounded by North Front and South Front Streets from Lincoln Street northwesterly for approximately 850 feet.

The EPA signed a Record of Decision (ROD) for OU5 on September 10, 2001. The selected remedy provides for the construction and operation of a single phase soil vapor extraction (SVE) system to remove PCE, TCE and cis-DCE which are contained in the soils. The ROD also provides for the construction and operation of an air sparging system to address those VOCs in the ground water and toluene, xylene, ethylbenzene, and benzene floating atop the ground water. After system shutdown, there will be two years of monitoring to confirm the success of the contaminant removal.

The EPA negotiated a Consent Decree with UPRR, the only defendant at the site, to implement the remedial action at OU5. The District Court of Nebraska entered this Consent Decree for Remedial Design/Remedial Action at OU5 on September 20, 2002.

The EPA is the lead agency for OU2 and OU5; NDEQ is the lead agency for OU1, OU3 and OU4.

Initial Response

During the period the RI was being conducted, EPA began a non-time-critical removal action to contain the highest levels of PCE contamination by extracting ground water from around the former One Hour Martinizing source area. This action was taken to prevent the contamination from impacting downgradient municipal water wells. Using available information from the RI, EPA prepared an engineering evaluation/cost analysis (EE/CA) and an Action Memorandum to support the removal action. The removal action consisted of the installation of one ground water extraction well at the One Hour Martinizing source area and connection of the discharge piping to the city sanitary sewer. With approval from the city and NDEQ, ground water from this area is being extracted and discharged to the sewer for treatment in the POTW.

Since July 1993, the extraction system has been pumping ground water to the sanitary sewer at a rate of approximately 50 gallons per minute. The Action Memorandum called for post-removal monitoring to ensure that the additional load does not adversely impact the operation of the city's POTW. Results of post-removal monitoring indicate that approximately 1,000 pounds of PCE have been removed from the ground water. No adverse impacts have been observed to the operation of the wastewater treatment plant.

Basis for Taking Action

The basis for taking action at this Site under CERCLA authorities was that the primary aquifer in the area was contaminated with chlorinated organic chemicals, primarily solvents and their degradation products, and this contamination threatened the public water supply. In addition, soil contamination was discovered which had the potential to further contaminate the ground water. Remediation of this soil and the ground water has been determined to be necessary.

IV. Remedial Actions

Remedy Selection

The Site is comprised of five separate OUs. The remedy for OUs 1-4 was presented in a ROD dated June 7, 1996. Construction of the remedial action for OU5 is scheduled to begin in the fall of 2003. Two remedial designs were developed for the OUs 1-4. Monitored natural attenuation for OUs 3 and 4 was initiated in June of 1997. An extraction and air stripping system for OU2 and a SVE system for OU1 were both constructed and became operational in September of 1997. For greater detail see the section on **History of Contamination**.

Remedy Implementation

The Site consists of five OUs. OUs 1 thru 4 are constructed and in operation. Construction of OU5 is scheduled to begin in November of 2003 and be completed in June of 2004. OUs 1, 3, and 4 have been turned over to and are now operated and maintained by the state of Nebraska, while EPA continues to conduct the long-term response action at OU2. OU5 is being constructed by private parties. OU1 is being remedied with a SVE system. The system is constructed and in operation. OU2 is treating ground water with an air stripper. This system is constructed and in operation. OU3 and OU4 consist of ground water monitoring of the plum to allow the natural process of microbial degradation and dilution to attenuate contaminant levels. A system of ground water monitoring wells are regularly monitored to determine the effectiveness of the natural processes in reducing the contaminants in the ground water. In addition, the city passed Grand Island City Code, Chapter 35, Article VI, Ground Water Control Area No. 1 (Ordinance) on February 16, 1998 (see attached conversation record and e-mail communications in Appendix B). The Ordinance restricted the consumptive use of ground water from wells within the ground water control area.

System Operation/Operation and Maintenance

Operation and maintenance of the soil and ground water treatment systems has consisted primarily of checking the system and performing routine maintenance of equipment. Quarterly monitoring of the systems' effectiveness has also been conducted. Operation and maintenance of OU3 and OU4 consists of quarterly sampling to determine the effectiveness of the natural attenuation processes in reducing the contaminant levels in the ground water. All systems are operating as designed. Adjustments have been made to optimize each system, and additional adjustments will be made if deemed appropriate.

A special note concerning OU1: The SVE system at One-Hour Martinizing broke down on October 2, 2002, and has not been in operation since that time. An assessment of the system revealed that the blower belt broke due to the base of the blower motor loosening. The NDEQ has tasked its contractor to perform field soil sampling and analysis at OU1. If the sampling results indicate the cleanup goals (proposed in a September 16, 2003 letter from NDEQ to EPA Region 7) have been met, NDEQ will propose the site has met the cleanup goals and proceed with closeout procedures for the OU. If the sampling results indicate the cleanup goals have not been met, NDEQ will direct its contractor to perform the repairs necessary to bring the SVE system back on-line and will continue to operate the system until such time it meets the appropriate cleanup goals.

V. Progress Since Last Five-Year Review

This is the first five-year review. Construction completion has yet to be achieved at this Site. Construction of OU5 will begin this year. Construction completion for the Site is currently anticipated in the summer of 2004.

VI. Five-Year Review Process

Administrative Component

The five-year review was initiated with a file review and review of state- and federally-financed summary reports on the activities taking place at the Site, and completed with the signing of this five-year review report in September 2003.

Community Involvement

Soon after approval of this five-year review report, a notice will be placed in the local newspaper announcing that the report is complete, and that it is available to the public at the repository in Grand Island and the EPA Region 7 office and that any citizen wishing a copy may receive one via U.S. mail or e-mail by contacting the RPM for the Site. In addition, if sufficient interest is shown by the public, a public meeting may be arranged to discuss the content of the five-year review.

Document Review

Documents reviewed for this five-year review included the RODs for OUs1-5, and the monitoring data that has been taken since the completion of OUs1- 4. This includes the semi-annual and annual reports on each OU. In addition, the Draft Remediation System Evaluation (RSE) that was performed by EPA and the U.S. Army Corps of Engineers was reviewed. This report made several recommendations to improve the efficiency and effectiveness of the remedies at OUs1 and 2.

Data Review

Monitoring Data from OUs3 and 4 has been taken and reported. The NDEQ has been operating OU1, OU3, and OU4 since EPA turned it over to the state in January 2000. The NDEQ contracted out the operations and maintenance of OU1, OU3, and OU4 to the University of Nebraska. Data gathered during this interval may be found in Appendix A, Tables 3 and 4. Ground water monitoring in the OU also demonstrates that there is continued contaminant reduction. The state of Nebraska is operating the SVE unit at OU1 and has provided data from the quarterly monitoring that demonstrate that the system continues to remove contaminants from the subsurface, see Appendix A, Table 1. The EPA's contractor operates the ground water treatment system (the air stripper) for OU2. Quarterly monitoring reveals that the system continues to remove the contaminants in the ground water to the levels prescribed in the ROD, prior to discharging treated water to the local storm sewer which eventually discharges to an area waterway. Review of the data reveals that the contaminant levels are declining, see tables attached in Appendix A, Table 2. The EPA would conclude from this information that these activities are operating as prescribed in the ROD and continue to be protective of human health and the environment.

Site Inspection

State and EPA contractors make weekly, quarterly, semi-annual, and annual visits to the Site to check on the operation and maintenance of the various systems treating ground water and soils. Trip reports, quarterly, semi-annual, and annual reports provide detailed information concerning the operation and conditions at the Site. Since this is an ongoing ground water and soil remediation, the reviews consist of assuring that the equipment is running as designed.

Interviews

It was determined by the Site RPM that no interviews were necessary for this five-year review report.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The remedies are functioning as intended by the decision documents for the first four OUs (OUs 1-4). All parameters are in the expected range, and the treatment systems are functioning as anticipated. See Appendix A for a summary of the performance data.

A special note concerning OU1: The SVE system at One Hour Martinizing broke down on September 2, 2002, and has not been in operation since that time. An assessment of the system revealed that the blower belt broke due to the base of the blower motor loosening. The NDEQ has tasked its contractor to perform field soil sampling and analysis at OU1. If the sampling results indicate the cleanup goals (proposed in a September 16, 2003 letter from NDEQ to EPA Region 7) have been met, NDEQ will propose the site has met the cleanup goals and proceed with closeout procedures for the OU. If the sampling results indicate the cleanup goals have not been met, NDEQ will direct its contractor to perform the repairs necessary to bring the SVE system back on-line.

The NDEQ contacted the city of Grand Island and has determined that the city passed Grand Island City Code, Chapter 35, Article VI, Ground Water Control Area No. 1 (Ordinance) on February 16, 1998 (see attached conversation record and e-mail communications). The Ordinance restricts the consumptive use of ground water from wells within the ground water control area. A copy of the ordinance and related communications is in Appendix B.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

There have been no changes in the physical conditions at the Site that would affect the protectiveness of the remedy. In a September 16, 2003, letter to EPA Region 7 RPM for Cleburn Street Site, NDEQ developed and proposed soil cleanup levels for OU1 that are protective of leaching to ground water. Another potential issue is that the vapor intrusion pathway was not

addressed in the ROD. The assessment of the vapor intrusion pathway is complex, and the study of this pathway has not been addressed. In light of the rapid development of assessment tools for this pathway, it may be desirable to validate methods and assumptions that were used at Cleburn Street and conduct an evaluation regarding the potential for vapor intrusion to be an issue of concern at this site.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There has not been any information that has come to light that would call into question the protectiveness of the remedy.

Technical Assessment Summary

All remedial activities at the Site continue to function as designed. Some adjustments to optimize performance of the active treatment systems have been initiated and others are being planned and/or evaluated. None of the modifications considered will change the fundamental nature of the system. Optimization evaluates the means of improving the efficiency of the system to more efficiently and effectively remove contaminants or reduce operating costs. It appears that OUs 3 and 4 may be nearing the RAOs for the Site; however, more data must be collected to make that determination. With the consideration of more data to be obtained in the future, this determination can be made.

VIII. Issues

The ongoing remedial actions are functioning as designed. Contaminant reductions are being consistently observed. Remedial action goals are nearly achieved in some locations, while at others it will be some time before the goals are reached. There are no significant issues to be resolved. Continued monitoring and operation of the treatment systems are required. The NDEQ, on behalf of the state, will continue to operate and maintain the OUs 1, 3, and 4 remedial actions. The EPA will continue to conduct the long-term response action at OU 2 for up to ten years from the start of the action. Additional optimization will be initiated where feasible. UPRR, under EPA and NDEQ oversight, will begin construction of the OU5 remedy in the fall of 2003 and should complete construction in the summer of 2004.

IX. Recommendations and Follow-Up Actions

OU1

It is recommended that the existing system continues to be operated and maintained, that the necessary parameters to determine the effectiveness of the system be monitored, and that the potential for further system optimization be evaluated as appropriate. Routine activities for OU1 are:

- continue operation of SVE unit
- continue monitoring ground water
- continue monitoring soil vapor parameters
- continue evaluation for system optimization

OU2

It is recommended that the existing system continue to be operated and maintained, that the necessary parameters to determine the effectiveness of the system be monitored, and that the potential for further system optimization be evaluated as appropriate. Routine activities for OU2 are:

- continue operation of ground water extraction system
- continue operation of air stripper
- continue monitoring of ground water
- continue monitoring air stripper
- continue evaluation for system optimization

OU3 & OU4

These two OUs have the selected remedy of Monitored Natural Attenuation. It appears that they may have, or very nearly have, reached the cleanup objectives. Continued monitoring and evaluation are necessary prior to making such a determination. Routine activities for OUs3 and 4 are as follows:

- continue monitoring
- begin considerations as to when goals have been reached
- begin determination as to timing for terminating monitoring.

OU5

- Implement ROD
- Complete construction and implement remedial action

X. Protectiveness Statement

The remedy is protective of human health and the environment. All remedial actions implemented at the site, OUs 1- 4, are protective. The remedial action for OU5 will be implemented as soon as practical. Although the remedy for OU 5 has not been installed, exposure is being controlled such that the remedy is protective in the short term and once the remedy is fully implemented, it will be protective in the long term. It is anticipated that the remedy will be constructed and operational by the summer of 2004.

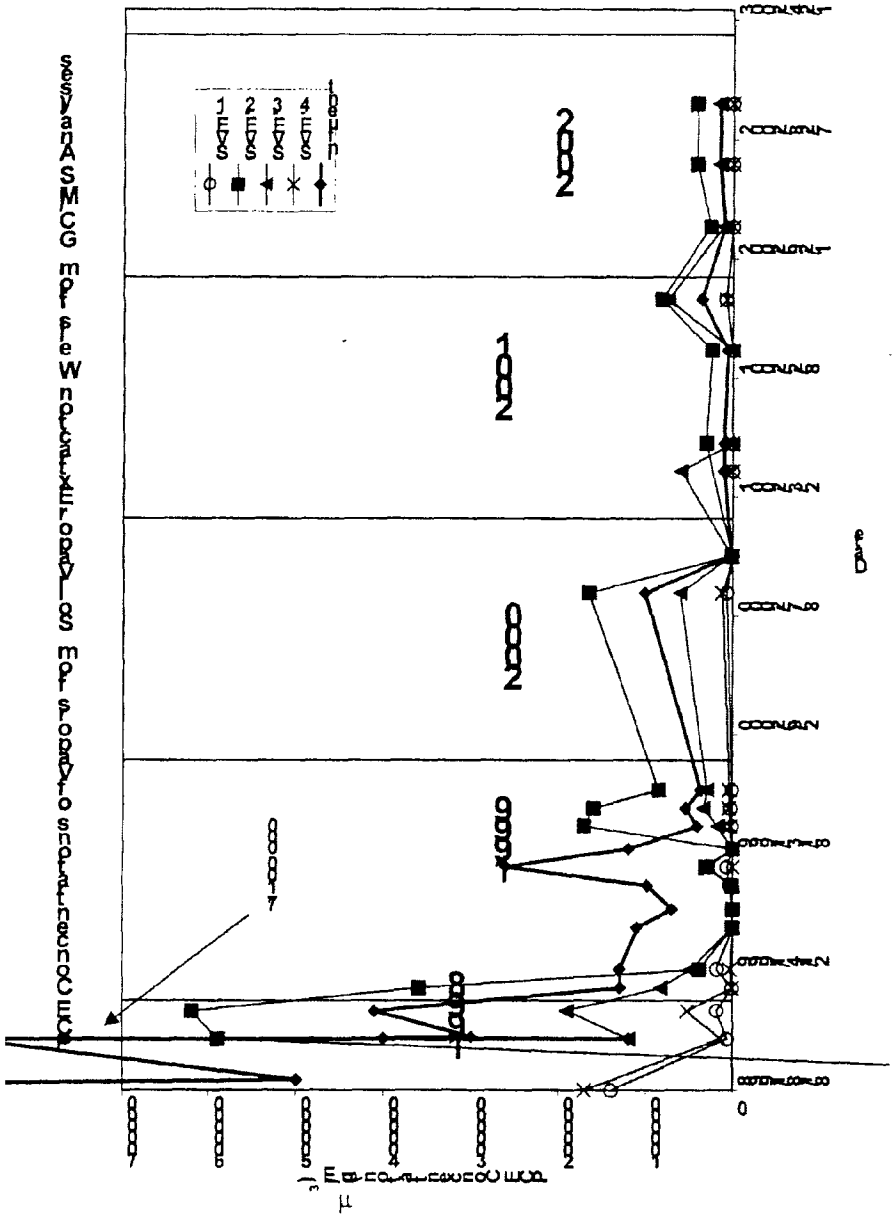
XI. Next Review

The next review will be five years from the date of this review. At that time, all five OUs of the Site will be reviewed. It is anticipated that some, if not all, of the units will be remediated at that time.

APPENDIX - A

Remedial action performance and monitoring results for OU1

Sample Event	Date	Vapor Concentrations from GC/MS						
		Number of Days from Startup	Carbon Adsorption Influent ($\mu g/m^3$)[c]	Carbon Adsorption Effluent ($\mu g/m^3$)	Vapor Extraction Well # 1 ($\mu g/m^3$)	Vapor Extraction Well #2 ($\mu g/m^3$)[b]	Vapor Extraction Well #3 ($\mu g/m^3$)	Vapor Extraction Well #4 ($\mu g/m^3$)
7-day	8/18/1998	0	1600000	1500	140000	7100000		170000
21-day	9/3/1998	16	500000	170000				
1st Quarter	11/2/1998	76	880000					
	11/3/1998	77	120000	600	6500	590000	120000	14000
	11/4/1998	78	400000					
	11/6/1998	80	300000					
	12/16/1998	120	410000	600	18000	620000	190000	52000
2nd Quarter	1/20/1999	155	130000	600	1000	360000	83000	710
	2/17/1999	183	130000	600	18000	38000	48000	2800
3rd Quarter	4/21/1999	246	110000	150	150	150	150	150
	5/19/1999	274	70000	1200	480	100	75	100
	6/23/1999	309	98000	44000	3700	800	1300	260
1st Annual	7/21/1999	337	260000	98000	6400	31000	28000	200
	8/18/1999	365	120000	100	100	75	75	160
	9/23/1999	401	40000	31	440	170000	17000	2400
	10/20/1999	428	54000	33	2400	160000	33000	4100
	11/17/1999	456	36000	84	580	85000	29000	3600
	9/11/2000	755	100721	12758	6715	165182	60433	11415
	11/6/2000	811	1880	67	336	1074	1679	0
	3/14/2001	939	9938	0	0	#N/A	59425	0
	4/25/2001	981	9938	0	0	30216	470	0
	9/13/2001	1122	5976	0	0	23972	0	0
	11/29/2001	1199	35454	0	7991	81853	74668	7319
	3/19/2002	1309	9065	873	0	25516	10744	0
	6/21/2002	1403	14269	0	0	40960	16115	0
	9/20/2002	1494	14269	0	0	40960	16115	0



Remedial action performance and monitoring results for OU3 and OU4

Date	MW-1A	MW-1B	MW-1C	MW-1D	MW-4A	MW-4B	MW-4C	MW-4D
4/14/1998	5.2	1.1	29	0.31	37	0.44	40	0.49
7/21/1998	13	0.31	13	0.13	50	0.31	13	0.31
10/26/1998	5.8	0.31	0.31	22				
10/27/1998					20	0.31	12	0.31
1/19/1999	4.6	0.31	46	0.31	9.1	0.31	13	0.31
7/20/1999	81	10	46	10	46	10	7	10
3/16/2000	20	0	77	0	9	0	11	0
6/22/2000	13	0	60	0	13	0	7	0
9/20/2000	9	0	27	0	6	0	0	0
1/3/2001	14	0		0	10	0	0	0
1/13/2001	11	0	41	0	6	0	0	0
3/31/2001	11	0	41	0	6	0	0	0
6/13/2001	0	0	26	0	5	#N/A	6	0
9/13/2001	12	0	22	0	0	#N/A	0	0
12/6/2001	17	0	25	0	4	#N/A	2	0
3/20/2002	17	<2	28	<2	<2	#N/A	<2	<2
10/22/2002	15	<2	26	<2	<2	#N/A	<2	<2

Sampling data for MW-4B between 6/13/2001 and 10/22/2002 not available.

System Operations for OU1

The SVE system at One-Hour Martinizing broke down on 10/02/03 and has not been in operation since that time. An assessment of the system revealed that the blower belt broke due to the base of the blower motor loosening. NDEQ has tasked its contractor to perform field soil sampling and analysis at OU1. If the sampling results indicate the cleanup goals (proposed in a September 16, 2003 letter from NDEQ to EPA Region 7) have been met, NDEQ will propose the site has met the cleanup goals and proceed with closeout procedures for the OU. If the sampling results indicate the cleanup goals have not been met, NDEQ will direct its contractor to perform the repairs necessary to bring the SVE system back on-line.

TABLE 2
parts per billion

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
October 1999 Sampling Event								
Extraction Well # 1	1 nd	1 nd	**1100**	1 nd	**5**	**29**	**5**	1 nd
Extraction Well # 2	1 nd	1 nd	**1700**	1 nd	**0.7**	1 nd	**3**	1 nd
Cleburn Street Well	1 nd	1 nd	**280**	1 nd	1 nd	**13**	1 nd	1 nd
Monitoring Well 2A	20 nd	20 nd	**43000**	20 nd	**250**	20 nd	**160**	20 nd
Monitoring Well 2B	1 nd	1 nd	**0.6**	1 nd	1 nd	1 nd	1 nd	1 nd
Monitoring Well 12A	**16**	**180**	**640**	**160**	**0.5**	**33**	**150**	**1200**
Monitoring Well 13A	1 nd	1 nd	**1**	1 nd	1 nd	1 nd	1 nd	1 nd
Monitoring Well 9 A	1 nd	1 nd	**12**	1 nd	1 nd	**0.6**	1 nd	1 nd
Monitoring Well 11A	1 nd	1 nd	**0.5**	1 nd	1 nd	1 nd	1 nd	1 nd
Monitoring Well 11 B	1 nd	1 nd	2	1 nd	1 nd	1 nd	1 nd	1 nd
January 2000 Sampling Event								
Extraction Well # 1	1 nd	1 nd	**2200**	1 nd	**2**		**5**	1 nd
Extraction Well #3	1 nd	1 nd	**85**	1 nd	1 nd		1 nd	1 nd
Cleburn Street Well	1 nd	1 nd	**93**	1 nd	1 nd		1 nd	1 nd
Monitoring Well 2A	5 nd	5 nd	**42000**	5 nd	**34**		**40**	5 nd
Monitoring Well 2B	5 nd	5 nd	**55000**	5 nd	**42**		**54**	5 nd
Monitoring Well 12A	**3**	**110**	**53**	**63**	1 nd		**14**	**590**

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Monitoring Well 13A	1 nd	1 nd	1 nd	1 nd	1 nd		1 nd	1 nd
April 2000 Sampling Event								
Extraction Well # 1		500 nd	**690**	100 nd			100 nd	100 nd
Extraction Well # 2		50 nd	**660**	50 nd			50 nd	50 nd
Extraction Well # 3		10 nd	**65**	10 nd			10 nd	10 nd
Cleburn Street Well		5 nd	**33**	5 nd			5 nd	5 nd
Monitoring Well 2A		5000 nd	**67000**	5000 nd			5000 nd	5000 nd
Monitoring Well 2B		1 nd	**2**	1 nd			1 nd	1 nd
Monitoring Well 12A		**220**	**190**	**270**			**180**	**1600**
Monitoring Well 13A		1 nd	**1**	1 nd			1 nd	1 nd
August 2000 Sampling Event								
Extraction Well # 1	10 nd	10 nd	**700**	10 nd	10 nd		10 nd	10 nd
Extraction Well # 2	50 nd	50 nd	**820**	50 nd	50 nd		50 nd	50 nd
Extraction Well # 3	10 nd	10 nd	**45**	10 nd	10 nd		10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**110**	10 nd	10 nd		10 nd	10 nd
Monitoring Well 2A	5000 nd	5000 nd	**41000**	5000 nd	5000nd		5000 nd	5000 nd
Monitoring Well 2B	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd
Monitoring Well 12A	50 nd	**200**	**170**	**240 j**	50 nd		**81**	**1000**
Monitoring Well 13A	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd
Monitoring Well 8A	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd
Monitoring Well 8B	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd
Monitoring Well 9 A	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Monitoring Well 10A	10 nd	10 nd	10 nd	10 nd	10 nd		10 nd	10 nd
Monitoring Well 10B	1 nd	1 nd	1 nd	1 nd	1 nd		1 nd	1 nd
Monitoring Well 11A	10 nd	10 nd	**29**	10 nd	10 nd		10 nd	10 nd
Monitoring Well 11 B	1 nd	1 nd	1 nd	1 nd	1 nd		1 nd	1 nd
October 2000 Sampling Event								
Extraction Well # 1	100 nd	100 nd	**1400**	100 nd			100 nd	100 nd
Extraction Well # 2	100 nd	100 nd	**780**	100 nd			100 nd	100 nd
Extraction Well # 3	10 nd	10 nd	**66**	10 nd			10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**89**	10 nd			10 nd	10 nd
Monitoring Well 2A	4000 nd	4000 nd	**1E+05**	4000 nd			4000 nd	4000 nd
Monitoring Well 2B	1 nd	1 nd	1 nd	1 nd			1 nd	1 nd
Monitoring Well 12A	20 nd	**130**	**170**	**160**			**120**	**860**
Monitoring Well 13A	1 nd	1 nd	1 nd	1 nd			1 nd	1 nd
January 2001 Sampling Event								
Extraction Well # 2	10 nd	10 nd	**1100**	10 nd	10 nd		10 nd	10 nd
Extraction Well # 3	1 nd	1 nd	**99**	1 nd	1 nd		1 nd	1 nd
Cleburn Street Well	1 nd	1 nd	**70**	1 nd	1 nd		1 nd	1 nd
Monitoring Well 2A	1 nd	**1 j**	**140000**	**6 j**	**160**		**230**	**2 j**
Monitoring Well 2B	1 nd	1 nd	1 nd	1 nd			1 nd	1 nd
Monitoring Well 12A	**23 j**	**210**	**200**	**160**	1 nd		**160**	**1300**
Monitoring Well 13A	1 nd	1 nd	1 nd	1 nd			1 nd	1 nd

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
April 2001 Sampling Event								
Extraction Well # 1		1 nd	**1200**	1 nd			1 nd	1 nd
Extraction Well # 2		1 nd	**1000**	1 nd			**2**	1 nd
Extraction Well # 3		5 nd	**55**	5 nd			5 nd	5 nd
Cleburn Street Well		5 nd	**46**	5 nd			5 nd	5 nd
Monitoring Well 2A		10000 nd	**110000**	10000 nd			10000 nd	10000 nd
Monitoring Well 2B		1 nd	1 nd	1 nd			1 nd	1 nd
Monitoring Well 12A		**150**	**110**	**230**			**110**	**1000**
Monitoring Well 13A		1 nd	1 nd	1 nd			1 nd	1 nd
July 2001 Sampling Event								
Extraction Well # 1	50 nd	50 nd	**10000**	50 nd			50 nd	50 nd
Extraction Well # 2	10 nd	10 nd	**2100**	10 nd			10 nd	10 nd
Extraction Well # 3	10 nd	10 nd	**96**	10 nd			10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**33**	10 nd			10 nd	10 nd
Monitoring Well 2A	36000 nd	36000 nd	**510000**	36000 nd			36000 nd	36000 nd
Monitoring Well 2B	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 12A	100 nd	**510**	**380**	**360**			**160**	**3500**
Monitoring Well 13A	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 8 A	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 8 B	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Monitoring Well 9 A	10 nd	10 nd	**14**	10 nd			10 nd	10 nd
Monitoring Well 10A	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 10B	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 11A	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
Monitoring Well 11 B	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
October 2001 Sampling Event								
Extraction Well # 1	0.5 nd	0.5 nd	**1400**	0.5 nd	**0.8**		**1**	0.5 nd
Extraction Well # 2	25 nd	25 nd	**520**	25 nd	25 nd		25 nd	25 nd
Extraction Well # 3	3 nd	3 nd	**42**	3 nd	3 nd		3 nd	3 nd
Cleburn Street Well	1 nd	1 nd	**17**	1 nd	1 nd		1 nd	1 nd
Monitoring Well 2A	500 nd	500 nd	**60000**	500 nd	500 nd		500 nd	500 nd
Monitoring Well 2B	0.5 nd	0.5 nd	0.5 nd	0.5 nd	0.5 nd		0.5 nd	0.5 nd
Monitoring Well 12A	**9**	**100**	**40**	**93**	5 nd		**39**	**700**
Monitoring Well 13A	0.5 nd	0.5 nd	0.5 nd	0.5 nd	0.5 nd		0.5 nd	0.5 nd
January 2002 Sampling Event								
Extraction Well # 1	10 nd	10 nd	**1110**	10 nd	10 nd		10 nd	10 nd
Extraction Well # 2	10 nd	10 nd	**690**	10 nd	10 nd		10 nd	10 nd
Extraction Well # 3	10 nd	10 nd	**61**	10 nd	10 nd		10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**27**	10 nd	10 nd		10 nd	10 nd
Monitoring Well 2A	10 nd	10 nd	**38000**	10 nd	**45**		**45**	10 nd

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Monitoring Well 2B	0.5 nd	0.5 nd	**1.3**	0.5 nd	0.5 nd		0.5 nd	0.5 nd
Monitoring Well 12A	**19**	**130**	**150**	**120**	10 nd		**120**	**920**
Monitoring Well 13A	0.5 nd	0.5 nd	0.5 nd	0.5 nd	0.5 nd		0.5 nd	0.5 nd
April 2002 Sampling Event								
Extraction Well # 1	100 nd	100 nd	**1200**	100 nd	100 nd	100 nd	100 nd	100 nd
Extraction Well # 2	10 nd	10 nd	**920**	10 nd	10 nd	10 nd	10 nd	10 nd
Extraction Well # 3	10 nd	10 nd	**75**	10 nd	10 nd	10 nd	10 nd	10 nd
Cleburn Street Well	0.5 nd	0.5 nd	**22**	0.5 nd	0.5 nd	0.5 nd	0.5 nd	0.5 nd
Monitoring Well 2A	5 nd	5 nd	**77000**	**6.9**	**170**	**2700**	**200**	5 nd
Monitoring Well 2B	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd
Monitoring Well 12A	**20**	**360**	**320**	**340**	10 nd	10 nd	**160**	**2300**
Monitoring Well 13A	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd	10 nd
July 2002 Sampling Event								
Extraction Well # 1	10 nd	10 nd	Error	10 nd			10 nd	10 nd
Extraction Well # 2	10 nd	10 nd	**540 j**	10 nd			10 nd	10 nd
Extraction Well # 3	10 nd	10 nd	**31 j**	10 nd			10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**21 j**	10 nd			10 nd	10 nd
Monitoring Well 2A	17000 nd	17000 nd	**130000**	17000 nd			17000 nd	17000 nd
Monitoring Well 2B	0.5 nd	0.5 nd	0.5 nd	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 12A	**25**	**170**	**61**	**310**			**90**	**1400**

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Monitoring Well 13A	0.5 nd	0.5 nd	**0.64**	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 8 A	0.5 nd	0.5 nd	**088**	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 8 B	0.5 nd	0.5 nd	0.5 nd	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 9 A	0.5 nd	0.5 nd	**17**	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 10 A	0.5 nd	0.5 nd	**1.1**	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 10 B	0.5 nd	0.5 nd	0.5 nd	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 11A	0.5 nd	0.5 nd	0.5 nd	0.5 nd			0.5 nd	0.5 nd
Monitoring Well 11 B	10 nd	10 nd	10 nd	10 nd			10 nd	10 nd
October 2002 Sampling Event								
Extraction Well # 1	10 nd	10 nd	**630 j**	10 nd	10 nd		10 nd	10 nd
Extraction Well # 2	50 nd	50 nd	**440**	50 nd	50 nd		50 nd	50 nd
Extraction Well # 3	10 nd	10 nd	**17**	10 nd	10 nd		10 nd	10 nd
Cleburn Street Well	10 nd	10 nd	**19**	10 nd	10 nd		10 nd	10 nd
Monitoring Well 2A	10000 nd	10000 nd	**97000**	10000 nd	10000 nd		10000 nd	10000 nd
Monitoring Well 2B	0.5 nd	0.5 nd	0.5 nd	0.5 nd	0.5 nd		0.5 nd	0.5 nd
Monitoring Well 12A	20 nd	**89**	**140**	**170**	20 nd		**93**	**580**
Monitoring Well 13A	0.5 nd	0.5 nd	**0.99**	0.5 nd	0.5 nd		0.5 nd	0.5 nd
January 2003 Sampling Event								
Extraction Well # 1	50 nd	50 nf	580.0	50.0 nd	50 nd	50 nd	50 nd	50 nd
Extraction Well # 2	10 nd	10 nd	240.0	10.0 nd	10.0 nd	10.0 nd	10.0 nd	10.0 nd

Sample Location	Benzene	Ethyl Benzene	PCE	Toluene	1,1,1-TCA	1,1,2-TCA	TCE	Xylene
Cleburn Street Well	10.0 nd	10.0 nd	36.0	10.0 nd	10.0 nd	10.0 nd	10.0 nd	10.0 nd
Monitoring Well 2A	10.0 nd	10.0 nd	120000.0	13.0 J	170.0 J	10.0 nd	240.0 J	10.0 nd
Monitoring Well 2B	nd	nd	0.66	Nd	nd	nd	nd	nd
Monitoring Well 12A	25.0 nd	160.0	270.0	170.0	25.0 nd	25.0 nd	87.0	240.0
Monitoring Well 13A	nd	nd	1.2	Nd	nd	nd	nd	ns
Monitoring Well 9 A	ns	ns	ns	ns	ns	ns	ns	ns
Monitoring Well 11A	ns	ns	ns	ns	ns	ns	ns	ns
Monitoring Well 11 B	ns	ns	ns	ns	ns	ns	ns	ns

TABLE 3

PCE CONCENTRATION AT OU3
parts per billion

Date	MW- 1A	MW- 1B	MW -1C	MW-1D
3-16-2000	20.0	nd	77.0	nd
6-22-2000	13.0	nd	60.0	nd
9-20-2000	9.0	nd	27	nd
1-03-2001	14.0	nd	nd	nd
3-15-2001	11.0	nd	41.0	nd
6-13-2001	nd	nd	26.0	nd
9-27-2001	12.0	nd	22.0	nd
12-6-2001	17.0	nd	25.0	nd
3-20-2002	17.0	nd	28.0	nd
10-22-2002	15.0	nd	26.0	nd

TABLE 4

PCE CONCENTRATIONS
parts per billion

DATA	MW - 4 A	MW - 4 B	MW - 4 C	MW - 4D
3-16-2000	9.0	nd	11.0	nd
6-22-2000	13.0	nd	7.0	nd
9-20-2000	6.0	nd	nd	nd
1-3-2001	nd	nd	nd	nd
3-15-2001	6.0	-	nd	nd
6-13-2001	5.0	-	6.0	nd
9-27-2001	nd	-	nd	nd
12-6-2001	4.0	-	2.0	nd
3-20-2002	nd	-	nd	nd
10-22-2002	nd	-	nd	nd

APPENDIX - B

Telephone Conversation Record

To: Brian Zurbuchen Date & Time: 9-17-03 15:45
From: Craig Lewis (Building Inspector Director)
Phone:(308) 385-5325
Subject: Cleburn Street Site, IIS 59391, Institutional Control Ordinance

Craig returned the phone message I left with the secretary. I explained to Craig that part of the remedy for the Cleburn Street Superfund Site was an institutional control ordinance (IC), to be passed by the City, prohibiting the use of ground water within the Groundwater Control Area No. 1 (ICA) from being used for human consumption. The City o Grand Island passed the ordinance as Chapter 35, Article VI, Groundwater Control Area No. 1. I explained that EPA and NDEQ were conducting a Five-Year Review of the protectiveness of the remedial measures implemented at the site. I explained that the ordinance required property owners to register existing wells and file an application for new wells with the IC.

I asked Craig if the ordinance was implemented and if the City had received notification of existing wells or had received any applications for new wells.

Craig said that no property owners have registered existing wells since the ordinance was passed. Craig stated that the City of Grand Island Building Department developed the form *Application for Well Permit*, referred to in §35-67 of the City ordinance. However, Craig stated that no applications for new wells have either been requested by the public or filed with the Building Department since the ordinance was passed. Craig stated that it would be highly unlikely that anyone within ICA could have installed a well after passage of the IC without the City's knowledge. Craig said that since the City has had a public water supply for a long time now it was unlikely that any property owners had existing private wells that are still being used. Craig said that some of the industries in the area might have wells to extract water for cooling, but none for consumption.

§35-60. Purpose

The United States Environmental Protection Agency issued a Record of Decision (ROD) for the Cleburn Street Well Superfund Site on June 7, 1996, which identified three sources of subsurface soil and groundwater contamination. These sources included the former One Hour Martinizing facility, Liberty Cleaners and Shirt Launderers, and Ideal Cleaners. The former Nebraska Solvent Company was identified as a possible fourth contamination source subject to subsequent evaluation and testing. The ROD described selected remedies for the three source areas, an element of which required the City of Grand Island to enact and enforce institutional control ordinances designating a Groundwater Control Area No. 1 in which groundwater use would be restricted to prevent human exposure and consumption of potentially contaminated groundwater, requiring registration of existing wells and requiring approval and registration of new wells. The institutional control ordinances are to remain in full force and effect until the groundwater contamination identified in the ROD is reduced to a level making the groundwater safe to be used as a source of drinking water pursuant to 42 USC §300g, et seq., the Safe Drinking Water Act, or its successor legislation.

§35-61. Definitions

As used in this Article, the following terms mean:

Groundwater means water pumped from a well located within the Groundwater Control Area No. 1 described in Section 35-62.

Groundwater Contamination means the chemicals of concern (COC) described in the United States Environmental Protection Agency Record of Decision (ROD) for the Cleburn Street Well Superfund Site date June 7, 1996, which was received and accepted by the Mayor and City Council pursuant to Resolution 98-28.

Groundwater Control Area No. 1 means a defined area within the corporate limits of the City of Grand Island subject to the institutional controls provided in this Article which are intended to prohibit human consumption of potentially contaminated groundwater from wells.

Well means a hole or shaft sunk into the earth in order to obtain water from a natural subterranean supply or aquifer.

The definitions found in Neb. Rev. Stat., Chapter 46 - Irrigation and Regulation of Water are adopted by reference, except where such definitions are in conflict with those provided in this section above.

§35-62. Groundwater Control Area Boundaries

The outer boundaries of the Groundwater Control Area No. 1 are described as follows: Commencing at the southeasterly corner of the intersection of 9th Street and Adams Street; thence running northeasterly along the south boundary of 9th Street to the southwesterly corner of the intersection of 9th Street and Sycamore Street; thence running southeasterly along the west boundary of Sycamore Street to the northwesterly corner of the intersection of Sycamore Street and 1st Street; thence running southwesterly along the north boundary of 1st Street to the northwesterly corner of the intersection of 1st Street and Locust Street; thence running southerly along the west boundary of Locust Street

to the intersection of Locust Street and Division Street; thence running southwesterly along the north boundary of Division Street to the northeasterly corner of the intersection of Division Street and Adams Street; thence running northwesterly along the east boundary of Adams Street to the point of beginning.

§35-63. Duration of Institutional Control Ordinance

(A) This Article shall remain in full force and effect for an initial term of twenty-five (25) years from the effective date following approval and adoption by the Mayor and City Council.

(B) The term of this Article may be extended by the Mayor and City Council if at the end of the initial term there remains groundwater contamination identified in the ROD described in Section 35-60 making the groundwater unsafe to be used as a source of drinking water pursuant to the Safe Drinking Water Act or its successor legislation.

(C) In the event the City of Grand Island is notified during the initial term by the Environmental Protection Agency that groundwater contamination within the Groundwater Control Area No. 1 has been reduced to a level making the groundwater safe to be used as a source of drinking water pursuant to the Safe Drinking Water Act or its successor legislation, the Mayor and City Council may proceed to repeal this Article forthwith.

§35-64. Prohibited Groundwater Uses

(A) Groundwater pumped from wells within the Groundwater Control Area No. 1 shall not be used for any human consumption including drinking water, cooking, washing or other household uses. Because groundwater from wells within the groundwater control area may be contaminated and present a hazard to the health, safety and welfare of persons exposed to said water, any known human consumption of groundwater from wells within the Groundwater Control Area No. 1 is a violation of this Article and is declared a public nuisance subject to abatement as provided hereafter.

(B) This Article shall not apply to uses of groundwater pumped from wells within the Groundwater Control Area No. 1 which do not involve human consumption, including, but not limited to, non-contact cooling wate for industrial, commercial or residential uses and watering of vegetation other than gardens, plants and trees producing food for human consumption.

§35-65. Well Registration

(A) All wells for which drilling has commenced or existing within the Groundwater Control Area No. 1 as of the effective date of this Article shall be registered with the Building Department by the person owning the real estate on which the well is located. There shall be no fee for registering an existing well.

(B) No person shall drill or install a well within the Groundwater Control Area No. 1 prior to applying for and obtaining a well permit from the Building Department. There shall be a nonrefundable fee in accordance with the City of Grand Island Fee Schedule paid to the Building Department contemporaneously with making an application for a well permit.

§35-66. Existing Well Registration, Information Required

The following information shall be submitted to the Building Department in connection with registering a wel in existence as of the effective date of this Article:

(A) The name and address of the person owning the real estate on which the well is located.

(B) The address and legal description of the property on which the well is located.

(C) The address of all properties being served by groundwater pumped from the well.

(D) A description of the uses of the water pumped from the well, including specifically whether such groundwater is used for human consumption including, but not limited to drinking, cooking, washing, or othe household uses.

(E) Whether City water is available to the property currently served by the well.

(F) The depth of the well, if known.

(G) A diagram showing the location of the well.

§35-67. New Well Registration, Application for Well Permit

The following information shall be submitted to the Building Department in connection with applying for a well permit for a new well in the Groundwater Control Area No. 1:

(A) The name and address of the person owning the real estate on which the proposed well is to be located.

(B) The address and legal description of the property on which the proposed well is to be located.

(C) The address of all properties to be served by groundwater pumped from the proposed well.

(D) A description of the uses to be made of water pumped from the proposed well, including a certification that said groundwater will not be used for human consumption, including but not limited to drinking, cooking, washing, or other household uses.

(E) Whether City water is available to the property to be served by the proposed well.

(F) The depth of the proposed well.

(G) A diagram showing the location of the proposed well.

§35-68. Violations of Institutional Control Ordinance, Abatement of Public Nuisance

Whenever the Building Department Director, or his/her designee has inspected any well within the Groundwater Control Area No. 1 and determined that groundwater pumped from the well is being used in violation of this Article, he/she shall send a written notice to the owner of record or owner's duly authorized agent, or person in

possession, charge or control, or to the occupant by ordinary first-class mail and by certified mail, return receipt requested, notifying the addressee of the violation. The written notice shall contain the following information:

(A) The street address and a legal description sufficient for identification of the premises on which the well is located.

(B) A brief and concise description of the acts or circumstances constituting a violation of this Article.

(C) A brief and concise description of the corrective action required to be taken to render the well and groundwater uses in compliance with this code.

(D) A brief and concise statement advising the addressee that if the well and groundwater uses are not brought into compliance with this Article within the time specified, that the Building Department Director, or his/her designee may order electrical power to the well disconnected and may request the City Attorney, with the consent of the Mayor, to file an action to abate the public nuisance and charge the costs thereof against the real estate, the owner of record and the addressee.

§35-69. Procedure for Abatement of Public Nuisance

If the addressee of the written notice described in Section 35-68 fails to abate said nuisance within the time specified, the City of Grand Island, at the written request of the Building Department Director, or his/her designee directed to the City Attorney, and with the consent of the Mayor, may proceed to abate said public nuisance pursuant to Section 20-15 of the Grand Island City Code, and charge the costs thereof against the real estate on which the well is located and the addressee of the written notice.

In the event the use of the groundwater in violation of this Article might cause irreparable harm or poses a threat to public health, safety or welfare, or the health, safety or welfare of the persons using the groundwater, the written notice to abate pursuant to Section 20-15 shall not be required as a condition precedent to commencing a legal action to obtain abatement of the nuisance. The City of Grand Island, with the consent of the Mayor, may immediately file an action requesting such temporary and permanent orders as are appropriate to expeditiously and permanently abate said public nuisances and protect the public health, safety or welfare or the health, safety or welfare of persons using the groundwater in violation of this Article.